

Gov. Doc
Can
Ag

PUBLICATION 678

ISSUED FEBRUARY, 1940

TECHNICAL BULLETIN 25

FIRST PRINTING

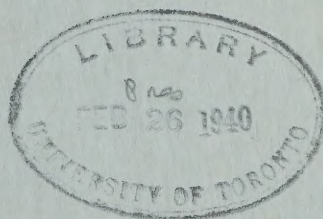
DOMINION OF CANADA—DEPARTMENT OF AGRICULTURE

3 1761 12000857 8

An Economic Study of the Consumption of Milk and Cream in Vancouver

Charlotte I. Johnston and W. C. Hopper

MARKETING SERVICE
ECONOMICS DIVISION



Published by authority of the Hon. JAMES G. GARDINER, Minister of Agriculture
Ottawa, 1940

PUBLICATION 678

ISSUED FEBRUARY, 1940

TECHNICAL BULLETIN 25

FIRST PRINTING

DOMINION OF CANADA—DEPARTMENT OF AGRICULTURE


An Economic Study of the Consumption of Milk and Cream in Vancouver

Charlotte I. Johnston and W. C. Hopper

MARKETING SERVICE
ECONOMICS DIVISION



Published by authority of the Hon. JAMES G. GARDINER, Minister of Agriculture
Ottawa, 1940



Digitized by the Internet Archive
in 2024 with funding from
University of Toronto

<https://archive.org/details/31761120008578>

TABLE OF CONTENTS

	PAGE
INTRODUCTION.....	5
Scope of Study and Source of Data	5
Adequacy of Sample.....	6
Per Capita Income.....	6
Division of City.....	6
CONSUMPTION OF MILK.....	7
Per Capita Income.....	8
Number of Children.....	9
Occupation.....	9
Racial Origin.....	10
Section of City.....	11
USE OF MILK.....	11
Quantities Purchased.....	11
Expenditure for Milk and Cream.....	12
Expenditure for Milk and Cream and all Food.....	12
Use of Pasteurized and Raw Milk of Various Grades.....	13
Reasons for Not Buying More Milk.....	15
Use of Milk According to Season.....	16
Place of Purchase.....	16
Extent to which Purchases were Confined to One Dairy.....	17
USE OF MILK AS A BEVERAGE.....	18
AVERAGE CONSUMPTION BY ADULTS.....	19
Per Capita Income.....	19
Number of Children.....	20
Men and Women.....	20
AVERAGE CONSUMPTION BY CHILDREN.....	21
Per Capita Income.....	21
Number of Children.....	22
Occupation.....	24
Racial Origin.....	25
Section of City.....	25
Boys and Girls.....	26
Milk at School.....	27
Beverages Other than Milk.....	27
Milk and Cream and Standing in School.....	29
USE OF CREAM, EVAPORATED MILK, CONDENSED MILK AND BUTTERMILK.....	29
Cream.....	29
Evaporated Milk.....	32
Condensed Milk.....	33
Buttermilk.....	33
CHARACTERISTICS OF SECTIONS OF CITY.....	34
SUMMARY.....	36
APPENDIX I. Questionnaire Used in Survey.....	39
APPENDIX II. Classification of Workers According to Occupation.....	40
APPENDIX III. Classification of Racial Origins.....	41

Consumption of Milk and Cream in Vancouver

CHARLOTTE I. JOHNSTON AND W. C. HOPPER

Marketing Service, Economics Division, Department of Agriculture

INTRODUCTION

This bulletin presents the results of a study of the consumption of milk and cream in the City of Vancouver, British Columbia, and is a co-operative project of the Economics Division of the Marketing Service, Dominion Department of Agriculture and the Department of Agriculture of the Province of British Columbia.

It is one of a series of consumption studies which have been conducted in recent years by the Economics Division, generally in co-operation with different provincial authorities, in an effort to learn more of the actual consumption of certain agricultural products, and of the underlying causes which tend to increase or decrease consumption. The findings of a study of the consumption of milk and cream in certain urban and rural areas of Canada have already been published by the Division,¹ and the results of two other studies, one on cheese consumption in certain urban and rural areas and the other on the consumption of meat, fish and poultry in certain Canadian cities are in course of preparation. In the two latter studies, an effort is being made to analyse consumer preference.

The increasing interest of the general public in the dietetic value of such agricultural products as milk and cheese, the need for more exact information of consumption and consumer preference by extension workers and others, and the interest shown in such studies by producers and distributors, all seem to suggest that studies of this kind are of considerable value. They form the basis upon which public health and welfare workers may arrange educational programs, they are of value to housewives in planning healthful meals, and to the processor or dealer, they are important in giving him a comprehensive picture of the requirements of his customers to enable him to arrange his business in a manner best suited to meet these requirements. In the final analysis, this is all of benefit to the producer, for the action of welfare workers tends to focus the attention of the public on the dietetic value of the commodities and helps to increase consumption, while the knowledge gained by the processor or dealer leads to a better organized marketing of the product with a possible reduction of overhead cost, which may in turn, be passed on to the producer.

Scope of Study and Source of Data.—The purpose of this study then is to present facts regarding the consumption of milk and cream in the City of Vancouver, British Columbia, and to assess the effect that various conditions have upon the consumption. Some of the more obvious conditions which affect milk and cream consumption are of course, income, and the number of young children in the family. But other factors may also have a bearing upon consumption. For this reason the information obtained was analysed from the point of view of occupation, racial origin, and the section of the city in which consumers lived. Throughout the bulletin the word milk refers to fresh fluid milk used in the household for all purposes, including that consumed in its natural form as a beverage. It does not include the milk used in purchased products such as cheese, bread and ice cream, nor does it include the consumption of milk or milk drinks by members of a household outside the home at restaurants, milk bars, and so forth. One section of the bulletin deals with the consumption of milk as

¹ An Economic Study of the Consumption of Milk and Cream in Certain Urban and Rural Districts. Bulletin No. 608. To be obtained from Department of Agriculture, Ottawa.

a beverage and here of course, that portion of the household milk supply used in cooking, and with cereals, tea and coffee and other drinks, has been excluded from the consumption tabulations. Included in the bulletin are also a few tables relating to the consumption of evaporated and condensed milk, but it is clearly indicated in such tables and in the accompanying text that reference is to manufactured and not fluid milk.

TABLE 1.—Comparison of the Percentage of Married Males in each Racial Origin Group in Vancouver according to the Census of 1931 and the Percentage of the Chief Wage-Earners of the 1,082 Households of the Survey in 1936 in each Racial Origin Group.

Racial origin	Census, 1931		Survey, 1936	
	Number of married males	Percentage of total	Number of households	Percentage of total
		%		%
English, Welsh, Manx.....	22,684	38.2	415	38.4
Scotch.....	12,753	21.5	222	20.5
Irish.....	6,405	10.8	106	9.8
British—not otherwise stated.....	942	1.6	23	2.1
French.....	923	1.6	13	1.2
Canadian—not otherwise stated.....			87	8.0
American—not otherwise stated.....			17	1.6
Teutonic—of countries of Northwestern Europe.....	2,958	5.0	53	4.9
Russian and Ukrainian.....	398	0.7	10	0.9
Italian.....	683	1.2	10	0.9
Other European.....	1,507	2.5	21	1.9
Jewish.....	525	0.9	11	1.0
Chinese.....	7,361	12.4	45	4.2
Japanese.....	1,817	3.1	45	4.2
Others, or racial origin not stated.....	296	0.5	4	0.4
Total.....	59,252	100.0	1,082	100.0

The information upon which the bulletin is based was obtained by personal interview with housewives at their homes, and the questionnaire used is shown in the appendix. The households were chosen at random from every part of the city and to ensure a representative sample, the 922 housewives interviewed were proportionate to the number of voters in each of the former electoral wards. In addition, answers to questionnaires were obtained from 45 Chinese and 45 Japanese households. The total number of records taken was therefore 1,082.

Adequacy of Sample.—The adequacy of the sample obtained is shown in table 1. Here the figures of the 1931 Census giving the racial origin of the married males in Vancouver are shown together with the figures of the racial origin of the chief wage-earners of the households used in the study. Some comment is needed on the figures for those of Chinese origin. Although the Census figures show that 12.4 per cent, or 7,361 of the 59,252 married males of Vancouver in 1931 were Chinese, only 342 married Chinese females were reported and therefore the figure for Chinese married males is not an indication of the number of actual Chinese households in Vancouver. Many of the wives and families of Chinese men living in Vancouver are in China.

Per Capita Income.—The basis used for many of the calculations throughout this study is that of annual per capita income. Annual per capita income is found by dividing the total annual income of the household by the number of persons in the household. It was considered more satisfactory for this particular study to group the household by this measure rather than by total annual household income, which is of course only a measure of the income coming into the home.

Division of City.—In order to compare the consumption of milk in various parts of Vancouver, the City was divided into five sections, A, B, C, D, and

E, as shown in figure 1. This division was made on the basis of the annual per capita income of the households; but because the division to be of any value for comparative purposes, had also to be geographic in character, there is naturally considerable variation of per capita income within sections. However, the five sections are a reasonably good division of the City according to average income. Based on an annual per capita income of \$300 or more, 98.8 per cent of the households in section E, 75.7 per cent of those in section D, and 67.8 per cent of those in section A, were in receipt of such an income, while in sections C and B, 53.9 per cent and 41.8 per cent, respectively, were within this average per capita income range. Other characteristics of the five sections are discussed in the final section of the bulletin.

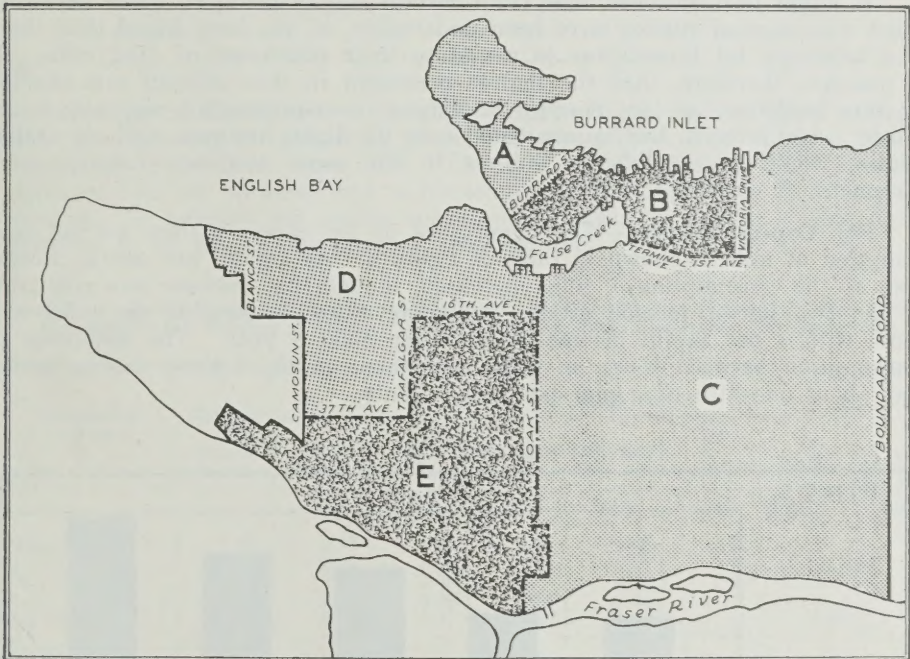


FIG. 1.—Outline map of the City of Vancouver showing areas into which the city was divided for survey purposes.

CONSUMPTION OF MILK

The daily per capita consumption of milk in the 1,082 households included in the study was found to be 0.65 of a pint. This is below the consumption rate for three Canadian cities which were included in a previous study¹ made by the Economics Division. In that study, the daily per capital consumption in Calgary was 0.74 of a pint; in Oshawa, 0.71 of a pint and in Quebec City, 0.68 of a pint. In a recent report, 1939, of the Milk Marketing Board, London, the daily per capita consumption of milk in England for the year 1937-38 was given as 0.42 of a pint. This, of course, did not apply to city consumption, but to the consumption for England as a whole.

The Lower Mainland Products Board of Vancouver estimated the daily per capita consumption of fluid milk and cream for the City of Vancouver to be 0.67 pint. This figure is based on returns made during February to

¹ An Economic Study of the Consumption of Milk and Cream in Certain Urban and Rural Districts of Canada. Bulletin No. 608. Department of Agriculture, Ottawa.

May, 1936, inclusive. In table 35 of this bulletin it will be seen that the daily per capita consumption of fluid cream was found to be 0.01 pint, so that the figure for the consumption of milk in Vancouver as estimated by the Lower Mainland Products Board, and as ascertained in this study are practically identical. Another study which is comparable in some measure to the one at present being reported upon is, "A Survey of Milk Consumption in 59 Cities in United States," published in June, 1936, by the United States Department of Agriculture. In this study the daily per capita consumption of whole milk and evaporated milk for five cities in the Pacific area of the United States was found to be 0.65 of a pint. The daily per capita consumption of evaporated milk in Vancouver, according to the present study, was 0.03 of a pint (table 40).

It might be mentioned that from careful checks made on other occasions when consumption studies have been undertaken, it has been found that there is a tendency for housewives to overstate their purchases of fluid milk. It is possible, therefore, that the figures presented in this bulletin are affected by this tendency, as the measure of general over-estimation was not determined. Any error in the figures would only be slight, however, and all similar studies would presumably be subject to the same tendency toward overstatement of consumption.

Per Capita Income.—The importance of per capita income on the consumption of milk is shown in table 2, figure 2. As annual per capita income rose, so the consumption of milk increased, though this increase was negligible in the two lowest income groups, including those households on relief and those with a per capita income of less than \$300 a year. The difference in consumption between those on relief and those in the highest income group was about one-fifth of a pint per person daily.

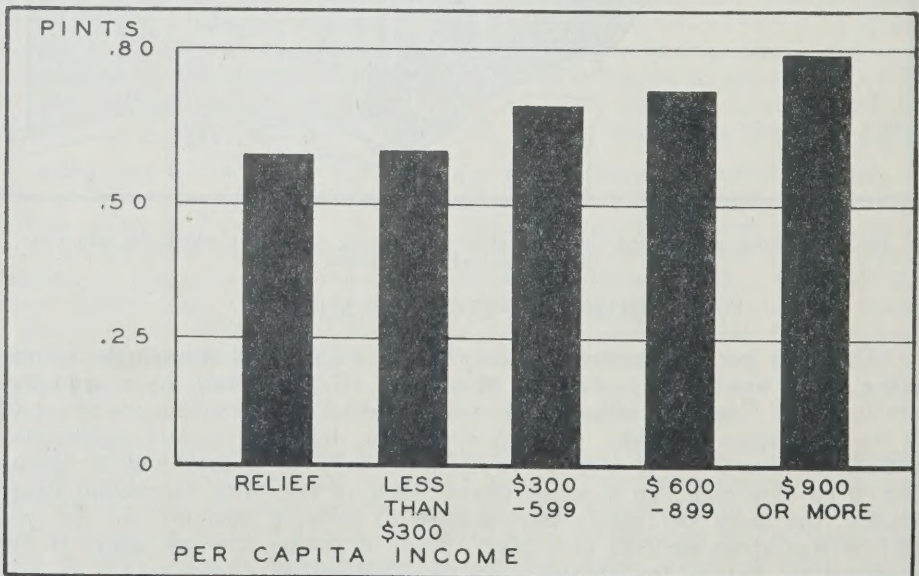


FIG. 2.—Daily per capita consumption of milk in each per capita income group.

TABLE 2.—Daily Per Capita Consumption of Milk in each Per Capita Income Group, 1,082 Households, Vancouver, 1936

Annual per capita income	Number of households	Daily per capita consumption
		pints
Relief.....	69	0.59
Less than \$300.....	347	0.60
\$300-\$599.....	420	0.69
\$600-\$899.....	194	0.72
\$900 or more.....	51	0.79
Not stated.....	1	0.44
Total.....	1,082	
Average.....		0.65

Number of Children¹.—It might be expected that the per capita consumption of milk would be greater in households where there were children, than in households where there were none. This was found to be the case in families with one and two children, but in households where there were more than this number, the average per capita consumption began to decline. This decline occurred in all of the per capita income groups.

TABLE 3.—Daily Per Capita Consumption of Milk in each Per Capita Income Group, in Groups classified according to the Number of Children in the Household, 1,082 Households, Vancouver, 1936.

Number of children	Number of households	Per capita income						
		Relief	Less than \$300	\$300-\$599	\$600-\$899	\$900 or more	Not stated	Average
		pints	pints	pints	pints	pints	pints	pints
None.....	504	0.47	0.54	0.61	0.68	0.74		0.62
1.....	235	0.61	0.66	0.73	0.78	0.93		0.71
2.....	173	0.68	0.70	0.79	0.97	1.20 ¹		0.76
3.....	96	0.61	0.60	0.73	0.58			0.63
4 or more.....	74	0.53	0.51	0.55			0.44 ¹	0.51
Total.....	1,082							
Average.....		0.59	0.60	0.69	0.72	0.79	0.44 ¹	0.65

¹ Number of persons less than 15.

Occupation.—In order to ascertain the effect of occupation upon milk consumption, the households were classified according to the occupation of the chief wage-earner of each household. The professional, and large business executive groups, which had the highest incomes, had the highest per capita rates of consumption of milk, and the unskilled labourer group, which was largely in the lowest income group, had the lowest per capita consumption, with the exception of the unemployed (figure 3, table 4). The professional group held its position for highest per capita consumption within the various per capita income groups more consistently than any other occupational group.

¹ "Children" includes all persons under 17 years of age.

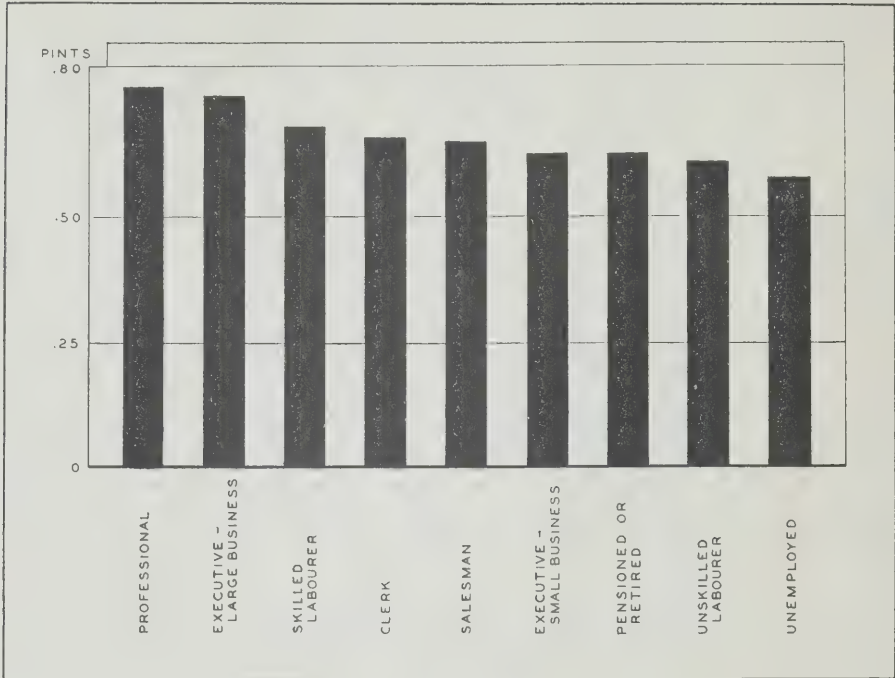


FIG. 3.—Daily per capita consumption of milk in each of nine groups classified according to occupation.

TABLE 4.—Daily Per Capita Consumption of Milk in each Occupational Group Divided According to Per Capita Income, 1,082 Households, Vancouver, 1936.

Occupation	Number of households	Per capita income						Average
		Relief	Less than \$300	\$300-\$599	\$600-\$899	\$900 or more	Not stated	
		pints	pints	pints	pints	pints	pints	pints
Professional.....	79	.....	0.68	0.75	0.76	0.94	.....	0.76
Executive: large business....	65	.....	0.50	0.72	0.74	0.82	.....	0.74
Executive: small business....	102	.....	0.49	0.73	0.80	0.17 ¹	0.44 ¹	0.63
Salesman.....	66	.....	0.63	0.65	0.69	0.63 ¹	.....	0.65
Clerk.....	80	.....	0.64	0.68	0.61	0.50 ¹	.....	0.66
Skilled labourer.....	263	.....	0.65	0.72	0.61	0.50 ¹	.....	0.68
Unskilled labourer.....	203	.....	0.57	0.68	0.83	.....	.....	0.61
Pensioned or retired.....	119	.....	0.65	0.56	0.72	0.79	.....	0.63
Unemployed.....	96	0.59	0.52	0.69	1.00 ¹	.....	.....	0.58
Others, or occupation not stated.....	9	.....	0.44	0.67	.....	.....	.....	0.55
Total.....	1,082	.....	.....	.....	.....	.....	.....	.....
Average.....	.....	0.59	0.60	0.69	0.72	0.79	0.44 ¹	0.65

¹ Number of persons less than 15.

Racial Origin.—In table 5, the consumption of milk is related to racial origin. As the records were also divided according to per capita income, a number of the groups are small and contain less than 15 persons. In general, and in practically all income groups, persons of British origin, Canadians whose origin was not stated, and those of Teutonic origins were relatively high consumers of milk. The Chinese and Japanese were decidedly low consumers.

TABLE 5.—Daily Per Capita Consumption of Milk in each Racial Origin Group Divided According to Per Capita Income, 1,082 Households, Vancouver, 1936.

Occupation	Number of households	Per capita income						Average
		Relief	Less than \$300	\$300—\$599	\$600—\$899	\$900 or more	Not stated	
		pints	pints	pints	pints	pints	pints	
English, Welsh, Manx.....	415	0.62	0.62	0.73	0.68	0.80	.....	0.68
Scotch.....	222	0.51	0.69	0.69	0.71	0.87	.....	0.69
Irish.....	106	0.59	0.61	0.68	0.87	0.85	.....	0.70
British—not otherwise stated	23	0.50 ¹	0.76	0.84	0.87 ¹	0.75 ¹	.....	0.79
French.....	13	0.67 ¹	0.60	0.62	0.50 ¹	.....	.....	0.59
Canadian—not otherwise stated	87	0.74	0.72	0.64	0.84	0.63 ¹	.....	0.71
American—not otherwise stated	17	.....	0.50 ¹	0.67	0.50 ¹	0.77	.....	0.66
Teutonic: of countries of Northwestern Europe.....	53	0.53	0.71	0.80	0.69	0.75	.....	0.71
Russian and Ukrainian.....	10	0.80 ¹	0.63	0.00 ¹	.....	.....	.....	0.61
Italian.....	10	.....	0.44	0.63	0.00 ¹	.....	.....	0.51
Other European.....	21	0.60	0.73	0.61	1.00 ¹	.....	.....	0.68
Jewish.....	11	.....	0.60 ¹	0.69 ¹	0.46 ¹	0.60 ¹	.....	0.59
Chinese.....	45	0.55	0.42	0.57	0.59	.....	0.44 ¹	0.46
Japanese.....	45	0.53	0.40	0.39	0.29 ¹	.....	.....	0.40
Others, or racial origin not stated.....	4	.....	0.46 ¹	1.00 ¹	0.67 ¹	.....	.....	0.58
Total.....	1,082	.....	.....	.....	.....	.....	.....	.....
Average.....	.....	0.59	0.60	0.69	0.72	0.79	0.44 ¹	0.65

¹ Number of persons less than 15.

Section of City.—Based on the daily per capita consumption of milk, the sections of the City fell into the following order: section E, consumption 0.81 pint; section D, 0.71 pint; section A, 0.70 pint; section C, 0.64 pint and section B, 0.52 pint. This was also the order when the sections were listed according to the percentage of households in each area, in which the per capita income was \$300 or more annually. This is a further indication of the close relationship between milk consumption and per capita income. However, other factors may have had some effect on the consumption in the different sections, as for instance the large number of Chinese and Japanese in section B. As has been mentioned previously the different characteristics of the various sections are discussed more fully elsewhere.

USE OF MILK

Quantities Purchased.—In all per capita income groups the number of households using 2 to 2.9 pints of milk per day was greater than the number using any other quantity (table 6).¹ More than 93 per cent of those households in each per capita income group bought exactly 2 pints daily. Approximately 22 per cent of all the households interviewed, but 43 and 32 per cent of the two highest per capita income groups used less than two pints per day. The fact that over 80 per cent of the households of those two high income groups had no children was no doubt the reason for their use of smaller quantities of milk. Approximately 9 per cent of the households receiving relief and 7 per cent of all the households used no fresh milk. In each per capita income group, a larger number of households used 4 to 4.9 pints than 3 to 3.9 pints per day, and more than 95 per cent of the former bought exactly 4 pints daily.

¹ Although for the purposes of tabulation, the quantity of milk used is shown in tables 6 and 7 in ranges of nine-tenths of a pint, milk is of course normally bought in multiples of a pint or half pint.

TABLE 6.—Percentage of Households Using Different Quantities of Milk Daily in each Per Capita Income Group, 1,082 Households, Vancouver, 1936.

Quantity of Milk	Per Capita Income						Average
	Relief	Less than \$300	\$300-\$599	\$600-\$899	\$900 or more	Not stated	
pints	%	%	%	%	%	%	%
None.....	8.7	5.2	6.7	7.8	7.8	0.0	6.6
Less than 1.0.....	2.9	1.2	1.4	3.6	5.9	0.0	2.0
1.0-1.9.....	5.8	6.3	14.0	20.6	29.4	0.0	13.0
2.0-2.9.....	42.0	39.2	37.4	43.3	33.3	0.0	39.1
3.0-3.9.....	13.0	13.5	14.0	6.7	5.9	0.0	12.1
4.0-4.9.....	23.2	21.0	19.8	13.9	7.8	100.0	19.1
5.0-5.9.....	0.0	4.0	1.9	0.5	2.0	0.0	2.2
6.0 or more.....	4.4	8.7	4.8	3.6	7.9	0.0	5.9
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Form 20 to 25 per cent of the households of sections D, C, A and B, and 15 per cent of those of section E, used less than 2 pints of milk per day (table 7). In E, about 44 per cent of the households used 4 or more pints per day.

TABLE 7.—Percentage of Households Using Different Quantities of Milk Daily in each Section of the City, 1,082 Households, Vancouver, 1936.

Quantity of Milk	Selection					Average
	A	B	C	D	E	
pints	%	%	%	%	%	%
None.....	6.5	12.4	5.9	5.8	2.5	6.6
Less than 1.....	3.2	2.6	1.7	2.7	0.0	2.0
1.0-1.9.....	14.5	9.8	14.4	11.5	12.5	13.0
2.0-2.9.....	35.5	40.5	41.0	36.9	33.8	39.1
3.0-3.9.....	16.1	7.2	12.9	13.9	7.5	12.1
4.0-4.9.....	14.5	17.0	17.1	22.7	28.7	19.1
5.0-5.9.....	0.0	3.3	2.3	2.3	1.2	2.2
6 or more.....	9.7	7.2	4.7	4.2	13.8	5.9

¹ See Figure 1.

Monthly Expenditure for Milk and Cream.—Approximately 51 per cent of the households receiving relief spent less than \$1 per month per head for milk and cream and only 1.4 per cent spent \$2 or more per head. As per capita income increased, the number of households spending less than \$1 per head for milk and cream decreased to 12 per cent, while the number spending \$2 or more increased to 45 per cent.

The percentages of the households of each section of the city for which the monthly per capita expenditure for milk and cream was \$1 to \$1.49 were as follows: A, 26 per cent; B, 25 per cent; C, 38.5 per cent; D, 34 per cent; and E, 35 per cent. In a large number of households monthly per capita expenditures for milk and cream were less than one dollar, the percentage in each section being: A, 21 per cent; B, 52 per cent; C, 35 per cent; D, 22 per cent; E, 9 per cent.

Expenditure for Milk and Cream and All Food.—The expenditure for milk and cream was stated for 1,079 households, and the per capita expenditure in those households was \$1.17 per month. As per capita income increased, expenditure rose from \$0.91 to \$1.74. In order to ascertain the proportion of the monthly food bill spent on milk and cream, inquiries were made as to the total amount spent on the purchase of food. This information was available for 823 households, or about 76 per cent of the total households included in the survey. The monthly food bill was also definitely related to per capita

income (table 8.) The milk and cream bill of households on relief was 18 per cent of the monthly expenditure for food, while for households of other per capita incomes it ranged from approximately 14 per cent to 12 per cent as per capita income increased. Thus those families in the highest per capita income group having \$900 or more per capita per annum, spent nearly three times as much per person per month for food, but only approximately twice as much for milk and cream, as the household on relief. This is no doubt to be expected, for as the income rises it is natural that there would be a higher expenditure up to a certain point, on food. The lower per capita income groups would be somewhat restricted from a financial point of view in their selection, while the higher per capita income groups, with a somewhat larger amount available for purchases of food, would tend to be more selective in their buying and purchase in greater variety. Under such circumstances, it is to be expected that the proportion spent on milk and cream would decline in relation to the total monthly food bill as the per capita income rose.

TABLE 8.—Monthly Per Capita Food Bill, Monthly Per Capita Bill for Milk and Cream, and the Relation Between Milk and Cream Bills and Food Bills in each Per Capita Income Group, 1,082 households, Vancouver, 1936.

Per capita income	Number of households stating food bills	Monthly per capita food bill	Number of households stating milk and cream bills	Monthly per capita bill for milk and cream	Total monthly milk and cream bill expressed as percentage of the total monthly food bill of the same households
		\$		\$	%
Relief.....	53	5 00	69	0 91	18.0
Less than \$300.....	258	6 90	345	0 98	14.4
\$300-\$599.....	320	10 00	420	1 28	13.1
\$600-\$899.....	149	12 10	193	1 50	12.8
\$900 or more.....	43	14 80	51	1 74	11.7
Not stated.....	0	.....	1	0 74	.....
Total.....	823	.....	1,079	.....	.....
Average.....	.....	8 90	.....	1 17	13.5

Use of Pasteurized and Raw Milk of Various Grades.—Pasteurized milk was used by more than 74 per cent of the 1,082 households, and raw milk by approximately 20 per cent. Fourteen households used both.

Grade 3¹ pasteurized milk was used by 47 per cent of the households, grade 1 by more than 18 per cent, and grade 2 by only 10 per cent (table 9). The percentage of the households using grade 1 increased from 1.4 of those in the relief group to nearly 55 per cent of the households having per capita incomes of \$900 or more (figure 4). The percentages of households using grade 3 decreased from 71 per cent to less than 18 per cent as the per capita income increased.

¹ Grades: 1. 5%-5.15% butterfat, price 13 cents per quart.
2. 4%-4.15% butterfat, price 11 cents per quart.
3. 3.25%-3.4% butterfat, price 10 cents per quart.

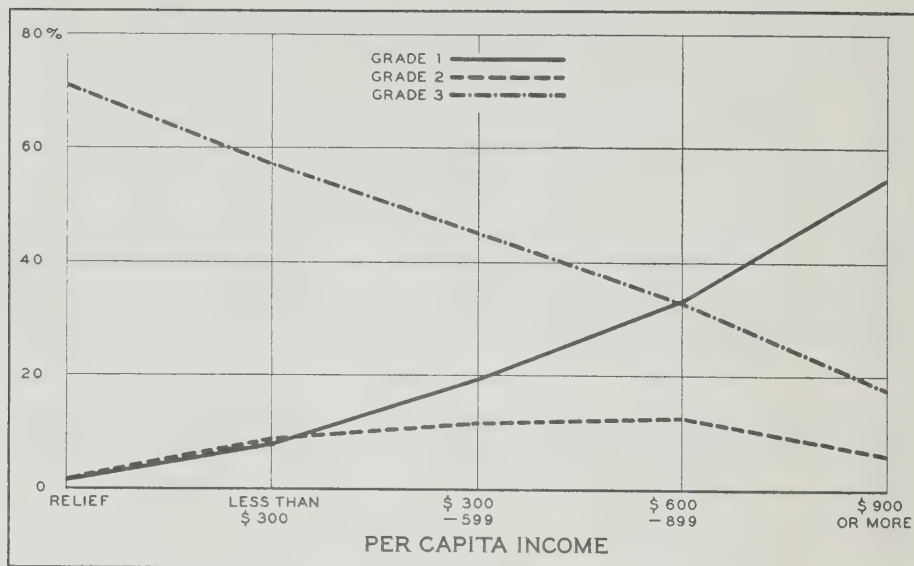


FIG. 4.—Percentage of households of each per capita income group using each grade of pasteurized milk.

TABLE 9.—Number of Households Using One or More of the Three Grades¹ of Pasteurized milk, and the Percentage of Households Using each Grade in each Per Capita Income Group, 1,082 Households, Vancouver, 1936.

Per capita income	Number of households						Percentage of households			
	Grade or grades—						Grade			Pasteurized
	1	2	3	1 and 2	1 and 3	2 and 3	1	2	3	
	No.	No.	No.	No.	No.	No.	%	%	%	%
Relief.....	1	1	49	0	0	0	1.4	1.4	71.0	73.9
Less than \$300.....	23	29	196	1	1	1	7.2	8.9	57.1	72.3
\$300-\$599.....	75	46	186	3	3	0	19.3	11.7	45.0	74.5
\$600-\$899.....	63	24	62	0	1	0	33.0	12.4	32.5	77.3
\$900 or more.....	28	3	9	0	0	0	54.9	5.9	17.6	78.4
Not stated.....	0	0	1	0	0	0	0.0	0.0	100.0	100.0
Total.....	190	103	503	4	5	1	18.4	10.0	47.0	74.5
Average.....										

¹ Grades: 1—5%–5.15% butterfat.

2—4%–4.15% butterfat.

3—3.25–3.4% butterfat.

Pasteurized milk was used by approximately 94 per cent of the households of section E, but by only 69 per cent of section C (table 10). Section E had a much larger percentage of households using grade 1 pasteurized milk than any other section. Sections B, C, and D had the largest percentages using grade 3 pasteurized milk.

Approximately 20 per cent of the households used raw milk. Grades 2 and 3 were each used by approximately 9 per cent and grade 1 by 1.8 per cent. Larger percentage of the lower income groups than of the higher used grade 3 raw milk.

In section C, 25.8 per cent of the households used raw milk, while in section E it was used by only 5 per cent.

TABLE 10.—Number of Households Using One or More of the Three Grades of Pasteurized Milk and the Percentage of Households Using each Grade in each Section of the City, 1,082 Households, Vancouver, 1936.

Section	Number of households						Percentage of households			
	Grade or Grades						Grade			Pasteurized
	1	2	3	1 and 2	1 and 3	2 and 3	1	2	3	
	No.	No.	No.	No.	No.	No.	%	%	%	%
A.....	22	6	18	1	0	0	37.1	11.3	29.0	75.8
B.....	17	9	89	1	2	0	13.1	6.5	59.5	77.1
C.....	60	48	256	0	1	1	11.6	9.3	49.0	69.4
D.....	49	29	119	1	2	0	20.0	11.5	46.5	76.9
E.....	42	11	21	1	0	0	53.8	15.0	26.3	93.8
Total.....	190	103	503	4	5	1				
Average.....							18.4	10.0	47.0	74.5

Reasons for Not Buying More Milk.—Reasons for not buying more milk were given by 1,004 households. Apart from the 14.4 per cent of the households where miscellaneous reasons were given, the two main reasons for not purchasing more were, that sufficient was purchased, and that the high cost prevented larger purchases (table 11). As per capita income increased, so the percentage of housewives who reported that they considered sufficient milk was purchased increased. On the other hand, as the per capita income decreased, so the percentage of housewives who considered they could not buy more milk at the current price increased.

TABLE 11.—Percentage of Households Giving Different Reasons for not Buying More Milk in each Per Capita Income Group, 1,004 Households, Vancouver, 1936.

Reasons for not buying more milk	Per capita income						Average
	Relief	Less than \$300	\$300—\$599	\$600—\$899	\$900 or more	Not stated	
	%	%	%	%	%	%	%
Enough bought.....	20.6	48.9	71.2	78.1	79.2	100.0	62.1
High cost.....	70.6	41.3	12.7	1.7	2.1	0.0	23.5
Canned milk used.....	2.9	2.5	3.9	5.2	6.2	0.0	3.7
Did not drink milk.....	2.9	1.9	2.9	6.9	4.2	0.0	3.3
Cream used.....	0.0	1.5	3.9	4.6	8.3	0.0	3.2
Did not like milk.....	0.0	1.2	3.6	2.3	0.0	0.0	2.2
High cost and poor quality..	3.0	1.8	0.5	0.0	0.0	0.0	1.0
Poor quality.....	0.0	0.9	0.5	0.6	0.0	0.0	0.6
Other reasons.....	0.0	0.0	0.8	0.6	0.0	0.0	0.4
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0

In table 12, the per capita consumption of the 624 households where it was considered that enough milk was purchased, is shown according to annual per capita income. The average consumption for all such households was 0.73 pint and the highest consumption was 0.85 pint. The 624 households were also grouped according to number of children in the household, occupation of the head of the household, racial origin of the head of the household, and section of the city in which the households were situated. In none of these groups did the daily per capita consumption exceed 0.89 pint. In households of four or more children the daily per capita consumption was 0.57 pint. Among the households where the head of the household was of British descent the consumption was 0.87 pint per person daily, while in Japanese households it was only 0.46 pint.

TABLE 12.—Daily Per Capita Consumption of Milk by Households Stating that Enough Milk was Bought in each Per Capita Income Group, 624 Households, Vancouver, 1936.

Per capita income	Percentage of households stating that enough milk bought	Per capita consumption
	%	pints
Relief.....	20.6	0.71
Less than \$300.....	48.9	0.65
\$300-\$599.....	71.2	0.76
\$600-\$899.....	78.1	0.79
\$900 or more.....	79.2	0.85
Not stated.....	100.00	0.44
Average.....	62.1	0.73

Use of Milk According to Season.—In 96 per cent of 1,051 households, there was no variation in the quantity of milk bought at different seasons of the year. More milk was bought in winter by approximately 2 per cent of the households, and almost the same number bought more in summer.

Place of Purchase of Milk.—Seven hundred and thirty-nine households stated to what extent milk was purchased at the door, that is, from dairy delivery wagons. Of those, 89 per cent bought all their milk at the door, and little more than 5 per cent bought none of their supply in this manner (table 13). Excluding the relief group, the percentage of housewives who had their milk supplies delivered increased with each increase in per capita income.

TABLE 13.—Percentage of Households Buying Different Percentages of Their Milk at the Door in each Per Capita Income Group, 739 Households, Vancouver, 1936.

Per capita income	Number of households stating percentage of milk bought at the door	Percentage of milk bought at the door			
		None	Less than 50 per cent	50 per cent—99 per cent	100 per cent
		%	%	%	%
Relief.....	45	6.7	0.0	2.2	91.1
Less than \$300.....	224	7.6	0.9	6.7	84.8
\$300-\$599.....	290	4.5	0.4	7.2	87.9
\$600-\$899.....	137	4.4	0.0	1.4	94.2
\$900 or more.....	42	0.0	0.0	2.4	97.6
Not stated.....	1	0.0	0.0	0.0	100.0
Total.....	739				
Average.....		5.3	0.4	5.4	88.9

Sixty-three per cent of the Chinese and 78 per cent of the Japanese households had all their milk delivered by the dairy.

In table 14 the manner in which milk was purchased in the various sections of the city is shown and here it is seen also that in the sections where the higher incomes predominated, a higher percentage of milk was bought at the door than by other methods. Section A is an exception to this, but as the number of families in that section was only three, the sample is not large enough to be representative.

TABLE 14.—Percentage of Households Buying Different Percentages of Their Milk at the Door in each Section of the City, 739 Households, Vancouver, 1936.

Per capita income	Number of households stating percentage of milk bought at the door	Percentage of milk bought at the door			
		None	Less than 50 per cent	50 per cent—99 per cent	100 per cent
		%	%	%	%
A.....	3	66.7	0.0	0.0	33.3
B.....	100	19.1	1.8	5.5	73.6
C.....	303	2.6	0.3	6.6	90.4
D.....	245	3.3	0.0	4.9	91.8
E.....	78	0.0	0.0	2.6	97.4
Total.....	739				
Average.....		5.3	0.4	5.4	88.9

Extent to Which Purchases were Confined to One Dairy.—Nearly 93 per cent of 720 households purchased their milk from one dairy only (table 15). Where information was obtained, the percentages of households buying from one dairy only corresponded closely with the percentages buying all their milk at the door in the various sections of the city, except in section B (table 16).

TABLE 15.—Percentage of Households Buying Milk from One Dairy only in each Per Capita Income Group, 720 Households, Vancouver, 1936.

Per capita income	Number of households	Percentage of households
		%
Relief.....	45	93.3
Less than \$300.....	215	91.2
\$300—\$599.....	282	90.8
\$600—\$899.....	135	97.0
\$900 or more.....	42	100.0
Not stated.....	1	100.0
Total.....	720	
Average.....		92.8

TABLE 16.—Percentage of Households Buying Milk from One Dairy only in each Section of the City, 720 Households, Vancouver, 1936.

Section	Number households	Percentage of households buying from one dairy only
		%
A.....	3	100.0
B.....	100	86.0
C.....	295	92.5
D.....	244	94.3
E.....	78	97.4
Total.....	720	
Average.....		92.8

USE OF MILK AS A BEVERAGE

The following pages are descriptive of the amount of milk consumed as a beverage by various groups. In a study¹ referred to previously the percentage of the total milk purchased which was used as a beverage was found to be, in Quebec City 73 per cent, in Calgary, Alta., 59 per cent and in Oshawa, Ont., 44 per cent. In the present study, the percentage for the 1,082 families in Vancouver amounted to 53·7 per cent.

TABLE 17.—Percentage of Milk Used as a Beverage in each Per Capita Income Group, 1,082 Households, Vancouver, 1936.

Per capita income	Milk used daily	Milk used as a beverage daily	Percentage of milk used as a beverage
	pints	pints	%
Relief.....	174·1	115·4	66·3
Less than \$300.....	1,019·7	608·1	59·6
\$300-\$599.....	1,057·8	549·4	51·9
\$600-\$899.....	413·0	172·0	41·6
\$900 or more.....	104·8	41·5	39·6
Not stated.....	4·0	4·0	100·0
Total.....	2,773·4	1,490·4	.....
Average.....			53·7

The relief group used a higher percentage as a beverage than any other income group. As the per capita income increased, so the consumption of milk used as a beverage declined (table 17), but as the number of children in the household increased, so did the percentage of milk used as a beverage increase (table 18). These two conditions may be expected, for under normal conditions, the households with the lower per capita incomes are also the households with the greater number of children. Generally speaking, the householders in the higher income groups are the older married couples—often with no children at home, and a lower consumption of milk taken as a beverage might be expected in such households.

TABLE 18.—Percentage of Milk Used as a Beverage in Groups Classified According to the Number of Children in the Households, 1,082 Households, Vancouver, 1936.

Number of children in the household	Milk used daily	Milk used as a beverage daily	Percentage of milk used as a beverage
	pints	pints	%
None.....	905·3	259·6	28·7
1.....	617·7	357·6	57·9
2.....	612·9	396·5	64·7
3.....	343·5	243·2	70·8
4 or more.....	294·0	233·5	79·4
Total.....	2,773·4	1,490·4	.....
Average.....			53·7

Table 19 shows the use of milk as a beverage among various racial origin groups. Chinese and Japanese households used over three-quarters of their milk purchases as a beverage, and European, other than Teutonic households consumed about two-thirds of their supplies as a beverage. Other racial origin groups consumed approximately half of their purchases in this way.

¹ An Economic Study of the Consumption of Milk and Cream in Certain Urban and Rural Districts. Bulletin No. 608. To be obtained from Department of Agriculture, Ottawa.

TABLE 19.—Percentage of Milk Used as a Beverage in each Racial Origin Group, 1,082 Households, Vancouver, 1936.

Racial origin	Milk used daily	Milk used as a beverage daily	Percentage of milk used as a beverage
	pints	pints	%
English, Welsh, Manx.....	1,011.1	476.2	47.1
Scotch.....	562.4	285.5	50.8
Irish.....	296.3	164.5	55.5
British—not otherwise stated.....	62.8	35.0	55.7
French.....	33.1	19.5	58.9
Canadian—not otherwise stated.....	242.4	121.0	49.9
American—not otherwise stated.....	37.5	21.0	56.0
Teutonic: of countries of Northwestern Europe.....	148.6	82.0	55.2
Russian and Ukrainian.....	30.0	20.5	68.3
Italian.....	20.0	12.5	62.5
Other European.....	54.0	35.2	65.2
Jewish.....	24.0	11.5	47.9
Chinese.....	137.7	120.5	87.5
Japanese.....	102.0	78.5	77.0
Others, or racial origin not stated.....	11.5	7.0	60.9
Total.....	2,773.4	1,490.4	.....
Average.....	.....	.....	53.7

AVERAGE CONSUMPTION OF MILK BY ADULTS

The following sections containing tables 20 to 29 inclusive, are descriptive of the consumption of milk as a beverage by adults and children. It will be noticed that in each table, the average consumption is given for those who actually drank milk as a beverage, and also the average consumption for all persons in the different groups, i.e. including those who drank milk as a beverage, and those who did not. While it is realized that both these consumption figures are of equal interest depending upon the particular information required, it became necessary for clarity in writing the text to select one or the other. For that reason, therefore, it will be found that all discussion of consumption throughout this section of the text refers to the average consumption by adults and children who actually drank milk as a beverage. Figures 5 and 6 however, are based on the average consumption of milk as a beverage by all children, including those who did not drink milk in that manner.

Approximately 14 per cent of the adults in the households included in the study drank milk as a beverage. The average consumption was nearly a pint daily. The percentage and consumption figures by per capita income groups are shown in table 20.

Per Capita Income.—The percentage of adults drinking milk was larger in the relief group than in the next higher per capita income group in which the per capita income was less than \$300. This group contained more than one-third of the adults. The average consumption by those drinking milk was, however, lower in the relief group. With the exception of the second highest per capita income group, the average consumption by adults drinking milk as a beverage ranged upward with per capita income from 0.81 pint to 1 pint daily.

TABLE 20.—Percentage of Adults Drinking Milk, and Daily Consumption of Milk as a Beverage by Adults in each Per Capita Income Group, 1,082 Households, Vancouver, 1936.

Per capita income	Number of adults	Percentage drinking milk	Average consumption	
			By those drinking milk	By all
		%	pints	pints
Relief.....	162	10.5	0.81	0.08
Less than \$300.....	1,103	7.4	0.95	0.07
\$300-\$599.....	1,180	15.1	0.94	0.14
\$600-\$899.....	520	22.7	0.88	0.20
\$900 or more.....	124	22.6	1.00	0.23
Not stated.....	4	0.0	.....	0.00
Total.....	3,003	.....	.....	.....
Average.....	.....	13.9	0.92	0.13

Number of Children.—As the number of children in the household increased, the percentage of adults who drank milk as a beverage declined. The decline was very marked in the group of households where there were three children, though the actual daily consumption of over one pint by adults in this group was comparatively high.

TABLE 21.—Percentage of Adults Drinking Milk, and Daily Consumption of Milk as a Beverage by Adults in Groups Classified According to the Number of Children in the Households, 1,082 households, Vancouver, 1936.

Number of children in the household	Number of adults	Percentage drinking milk	Average consumption	
			By those drinking milk	By all
		%	pints	pints
None.....	1,462	19.0	0.93	0.18
1.....	633	13.3	0.89	0.12
2.....	461	7.8	0.96	0.07
3.....	254	2.4	1.08	0.03
4 or more.....	193	6.2	0.88	0.05
Total.....	3,003	.....	.....	.....
Average.....	.....	13.9	0.92	0.13

Men and Women.—Table 22 gives a comparison of the daily consumption of milk as a beverage by men and women. On the average, men were heavier

TABLE 22.—Comparison of the Daily Consumption of Milk as a Beverage by Men and Women in each Per Capita Income Group, 1,082 Households, Vancouver, 1936.

Per capita income	Women		Men	
	Number drinking milk	Average consumption	Number drinking milk	Average consumption
		pints		pints
Relief.....	9	0.73	8	0.89
Less than \$300.....	35	0.88	39	1.01
\$300-\$599.....	92	0.86	86	1.02
\$600-\$899.....	71	0.84	47	0.95
\$900 or more.....	15	1.05	13	0.94
Total.....	222	.....	193	.....
Average.....	.....	0.86	.....	0.99

consumers of milk than women, and drank nearly one pint daily compared with the 0.86 pint taken by women. The consumption by men was greater in all but the highest per capita income group.

AVERAGE CONSUMPTION OF MILK BY CHILDREN

Approximately 86 per cent of the children drank milk and the daily average consumption was more than one pint.

About 42 per cent of the children drank 1 to 1.4 pints per day (table 23), and all but 3 per cent of these drank just 1 pint. The percentage drinking one and a half pints or more rose from 9.1 per cent of the relief group to 46.5 per cent of the \$600 to \$899 per capita income group, while 7 of the 8 children of the highest per capita income group drank at least 1.5 pints per day.

TABLE 23.—Percentage of Children¹ Drinking Various Quantities of Milk Daily in each Per Capita Income Group, 1,082 Households, Vancouver, 1936.

Quantity of milk pints	Per capita income						
	Relief	Less than \$300	\$300– \$599	\$600– \$899	\$900 or more	Not stated	Average
	%	%	%	%	%	%	%
None.....	16.5	18.4	6.5	5.4	0.0	0.0	14.1
0.1–0.5.....	21.0	19.2	9.1	8.9	0.0	0.0	15.9
0.6–0.9.....	15.8	11.4	3.8	5.3	0.0	100.0	9.8
1.0–1.4.....	37.6	39.8	51.5	33.9	12.5	0.0	42.2
1.5–1.9.....	5.3	4.4	10.9	28.6	37.5	0.0	7.6
2 or more.....	3.8	6.8	18.2	17.9	50.0	0.0	10.4
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0

¹ Under 17 years of age.

Per Capita Income.—The percentage of children drinking milk was much lower in the lowest per capita income groups than in the higher (table 24), and the average consumption by those children drinking milk showed great differences also, so that there was a range of over a third of a pint between the average consumption by children in the relief group and that by children in the per capita income group \$600 to \$899. Even between the two highest income groups there was considerable difference in average consumption, but consideration must be given to the fact that there were only 8 children in the highest group.

TABLE 24.—Percentage of Children Drinking Milk, and Daily Consumption of Milk as a Beverage by Children in each Per Capita Income Group, 1,082 Households, Vancouver, 1936.

Per capita income	Children			
	Number of children	Percentage drinking milk	Average Consumption	
			By those drinking milk	By all
		%	pints	pints
Relief.....	134	83.6	0.92	0.76
Less than \$300.....	698	81.9	0.95	0.78
\$300–\$599.....	346	93.6	1.20	1.13
\$600–\$899.....	56	94.6	1.28	1.21
\$900 or more.....	8	100.0	1.69	1.69
Not stated.....	5	100.0	0.80	0.80
Total.....	1,247			
Average.....		86.1	1.04	0.90

Ninety-five and a half per cent of all the children under 6 years of age drank milk (table 25), and in each per capita income group 92 per cent or more drank it. The average consumption by these children was 1.16 pints per day and this varied with per capita income.

TABLE 25.—Percentage of Children Drinking Milk, and Daily Consumption of Milk as a Beverage by Children Classified by Age in each Per Capita Income Group, 1,082 Households, Vancouver, 1936.

Per capita income	Children			
	Number of children	Percentage drinking milk	Average Consumption	
			By those drinking milk	By all
		%	pints	pints
<i>Children under 6 years of age:—</i>				
Relief.....	48	91.7	1.04	0.95
Less than \$300.....	201	95.0	1.09	1.03
\$300-\$599.....	117	98.3	1.29	1.27
\$600-\$899.....	13	92.3	1.38	1.27
\$900 or more.....	1	100.0	2.00	2.00
Total.....	380			
Average.....		95.5	1.16	1.11
<i>Children 6-12 years of age inclusive:—</i>				
Relief.....	68	85.3	0.85	0.73
Less than \$300.....	328	80.2	0.87	0.69
\$300-\$599.....	138	95.7	1.18	1.13
\$600-\$899.....	24	100.0	1.35	1.35
\$900 or more.....	4	100.0	1.50	1.50
Not stated.....	4	100.0	0.80	0.80
Total.....	566			
Average.....		85.7	0.98	0.84
<i>Children 13-16 years of age inclusive:—</i>				
Relief.....	18	55.6	0.76	0.42
Less than \$300.....	165	69.1	0.90	0.62
\$300-\$599.....	91	84.6	1.11	0.94
\$600-\$899.....	19	89.5	1.12	1.00
\$900 or more.....	3	100.0	1.83	1.83
Not stated.....	1	100.0	0.80	0.80
Total.....	297			
Average.....		74.7	1.00	0.74

Approximately 86 per cent of the children aged 6 to 12 years inclusive drank milk as a beverage. The average consumption by the children within this age group was 0.98 pint per day or 0.18 pint less than the average amount drunk by the children under six. The average amount taken as a beverage rose as per capita income rose, and the children in the highest per capita income group in which there was a representative sample, drank half a pint more than the children in families on relief or those in families where the per capita income was less than \$300 annually.

About 75 per cent of the children aged 13 to 16 years inclusive drank milk. The average consumption by those children was 1.00 pint per day. As in the other two age groups, the average amount taken as a beverage rose as per capita income rose.

Speaking generally, it would seem safe to conclude that per capita income is a major factor in the amount of milk consumed as a beverage by children up to 16 years of age.

Number of Children.—The daily average consumption of milk as a beverage decreased as the number of children in the household increased

(table 26). The average consumption by children in households having four or more children was over half a pint less than the average consumption by children of single-child households.

As the number of children in the family increased up to three, the tendency was for the amount consumed by each child to decline, rather than for the percentage of children drinking milk to decrease noticeably. In other words, each child was given his or her share of the milk available for drinking purposes. There was, however, a fairly substantial drop in the percentage of children drinking milk in the families of four or more children, but as will be seen from table 27 this decline was influenced chiefly by the declines in the older age groups.

TABLE 26.—Percentages of Children Drinking Milk, and Daily Consumption of Milk as a Beverage by Children in Groups Classified According to the Number of Children in the Household, 1,082 Households, Vancouver, 1936.

Number of children in the household	Children			
	Number of children	Percentage drinking milk	Average Consumption	
			By those drinking milk	By all
		%	pints	pints
1.....	235	87.7	1.38	1.21
2.....	346	92.5	1.15	1.06
3.....	288	92.7	0.90	0.83
4 or more.....	378	74.3	0.81	0.60
Total.....	1,247			
Average.....		86.1	1.04	0.90

The percentage of children under six years of age drinking milk as a beverage increased as the number of children in the household rose to three, while the average consumption declined steadily as numbers in the household increased (table 27, figure 5). The average daily consumption in households of four or more children, was 0.87 pint.

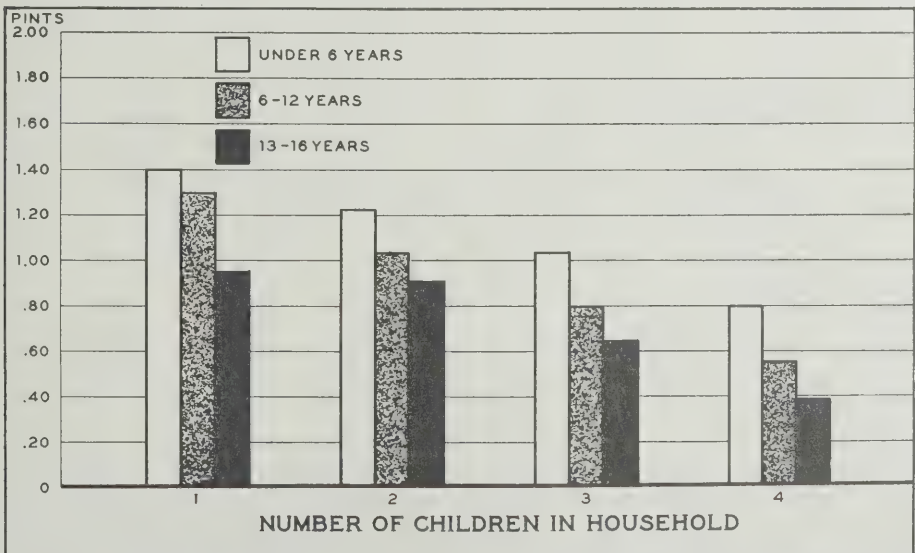


FIG. 5.—Daily average consumption of milk as a beverage by all the children of three age groups, classified according to the number of children in the household.

Approximately 93 per cent of the children aged 6 to 12 years drank milk in households of one, two or three children, but in households of four or more children the percentage fell to 71·7 per cent. The average daily consumption decreased as the number of children in the household increased, and ranged from 1·40 pint in households with but one child to 0·77 pint in households of four or more.

In the age group of children of 13 to 16 years of age, the percentage of children drinking milk as a beverage was decidedly lower in families of all sizes, and in those of four or more children, nearly half the children did not drink milk as a beverage. In this age group too, average daily consumption declined with each increase in the number of children in the family.

Lest some doubt may arise in the reader's mind, particularly over the percentage of children drinking milk in the group of under 6 years of age, it should be emphasized that this section refers to consumption of milk as a beverage only. Many infants who would come within this group are reared on various special diets which may be made up with fresh or canned milk, but the milk used for such purposes is not classed as a "beverage" for the purposes of this study. Actually nearly 30 per cent of the children of this age group who did not drink fresh milk, drank canned milk or beverages made with canned milk.

TABLE 27.—Percentage of Children Drinking Milk, and Daily Consumption of Milk as a Beverage by Children Classified by Age in Groups Classified According to the number of Children in the Household, 1,082 Households, Vancouver, 1936.

Number of children in the household	Children			
	Number of children	Percentage drinking milk	Average Consumption	
			By those drinking milk	By all
		%	pints	pints
<i>Children under 6 years of age:—</i>				
1.....	80	91·3	1·54	1·40
2.....	112	98·2	1·25	1·23
3.....	80	100·0	1·04	1·04
4 or more.....	108	92·6	0·87	0·80
Total.....	380			
Average.....		95·5	1·16	1·11
<i>Children 6-12 years of age inclusive:—</i>				
1.....	71	93·0	1·40	1·30
2.....	152	93·4	1·11	1·04
3.....	145	93·1	0·86	0·80
4 or more.....	198	71·7	0·77	0·55
Total.....	566			
Average.....		85·7	0·98	0·84
<i>Children 13-16 years of age inclusive:—</i>				
1.....	84	79·8	1·19	0·95
2.....	82	82·9	1·07	0·88
3.....	63	82·5	0·79	0·65
4 or more.....	68	51·5	0·79	0·39
Total.....	297			
Average.....		74·7	1·00	0·74

Occupation.—When the different occupational groups were arranged according to consumption of milk as a beverage by children of all ages up to 17, the professional and large business executive groups were at the top and the unskilled labourer group was at the bottom of the list. The higher incomes of the upper groups were undoubtedly a reason for higher average consumption by children in those groups.

The highest average rates of consumption for the three age groups were found to be in the following occupational groups:

Under 6 years of age: Executive—large business, Professional; Clerk;
6-12 years of age: Professional, Executive—large business;
13-16 years of age: Executive—large business; Salesman;

The lowest rates were in the following occupational groups:

Under 6 years of age: Pensioned; Unemployed; Unskilled labourer;
6-12 years of age: Unskilled; Unemployed;
13-16 years of age: Unskilled; Unemployed.

Racial Origin.—Of racial origin groups each of which contained at least 15 children, the British—not otherwise stated, and Canadian—not otherwise stated, children drank 1.23 and 1.20 pints respectively, of milk daily. Children of other British groups and European groups, excepting one, drank 1.03 to 1.13 pints per day, while that European group, the Chinese, and Japanese children drank 0.90, 0.89 and 0.70 pints respectively.

The lowest percentages of children drinking milk as a beverage were those of the Russian, Chinese and Canadian—not otherwise stated, groups.

In those groups having a considerable number of children, and for which, therefore, the figures may be considered representative, the Canadian not otherwise stated, group had the largest average consumption of 1.41 pints by children under six years of age. Those of the English, Scotch, Northwestern European, and Irish groups drank 1.22 to 1.16 pints, while the average consumption by the Chinese was 1.05 pints and by the Japanese, only 0.73 pint.

Children 6 to 12 years of age of the English, Canadian—not otherwise stated, Russian and Ukrainian, Irish, Northwestern European and Scotch racial origin groups drank 1.08 to 1.03 pints. Consumption by the children of that age was 0.79 pint and by the Japanese only 0.69 pint.

Children aged 13 to 16 of Scotch, Canadian—not otherwise stated, English, Teutonic and Irish, racial origin groups drank 1.11 pints to 1.05 pints per day. The Chinese and Japanese drank 0.81 pint and 0.63 pint, respectively.

The average amounts of milk drunk per day by the children of the three age groups, omitting Chinese and Japanese children, were: under 6 years of age, 1.23 pints, 6 to 12 years of age, 1.05 pint, and 13 to 16 years of age, 1.05 pint, as contrasted with 1.16, 0.98 and one pint, which were the average amounts consumed by the children of all racial groups.

Section of City.—The percentages of children drinking milk in the five divisions of the city varied from 95.1 in section A to 78.8 in B (table 28). The highest average consumption was 1.42 pints in section E, but that of B

TABLE 28.—Percentage of Children Drinking Milk, Daily Consumption of Milk as a Beverage by Children in each Section of the City, 1,082 Households, Vancouver, 1936.

Section ¹	Children			
	Number of children	Percentage drinking milk	Average Consumption	
			By those drinking milk	By all
		%	pints	pints
A.....	41	95.1	1.03	0.98
B.....	302	78.8	0.90	0.71
C.....	608	85.9	1.03	0.88
D.....	234	93.2	1.15	1.08
E.....	62	91.9	1.42	1.30
Total.....	1,247			
Average.....		86.1	1.04	0.90

¹ See Fig 1.

was only 0.90 pint. In order of average consumption, the sections were as follows: E, D, A, C, B. This is also the order of the sections when arranged according to the percentage of households with an annual per capita income of \$300 or more.

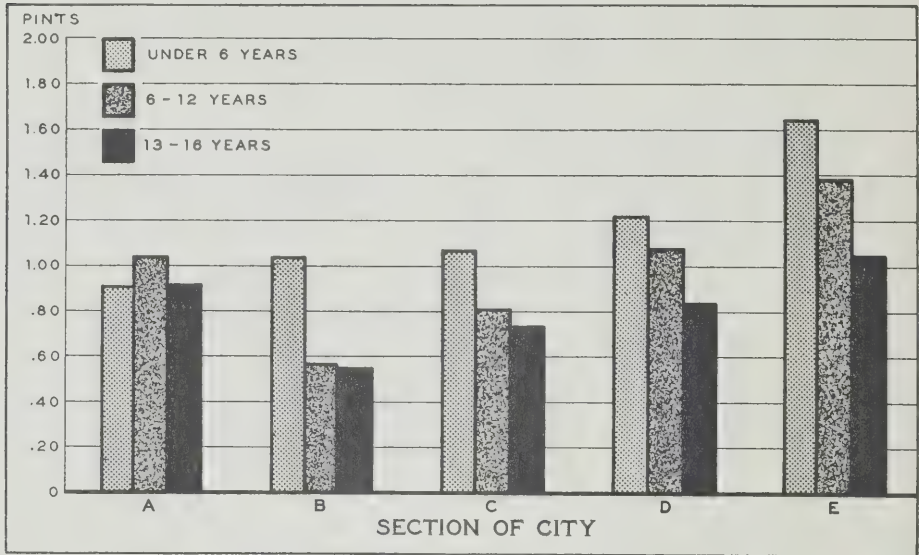


FIG. 6.—Daily average consumption of milk as a beverage by all children of three age groups in each of the sections of the city.

When the sections were arranged according to the average consumption by children under 6 years of age, the order was E, D, C, B, A, but there were only 7 of such children in section A. For the other two age groups the order was E, D, A, C, B.

Boys and Girls.—The average consumption by boys who drank milk as a beverage was 1.06 pint, and that by girls was 1.05 (table 29). Nearly 88 per cent of the boys and 83.5 per cent of the girls drank milk.

TABLE 29.—Percentage of Boys and Girls Drinking Milk and Consumption of Milk as a Beverage by Boys and Girls in each Per Capita Income Group, 1,082 Households, Vancouver, 1936.

Per capita income	Number		Percentage drinking milk		Average consumption by those drinking milk		Average consumption by all	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
			%	%	pints	pints	pints	pints
Relief.....	69	58	81.2	84.5	0.88	0.99	0.71	0.83
Less than \$300.....	335	343	84.8	78.1	0.95	0.96	0.80	0.75
\$300-\$599.....	171	161	94.7	91.9	1.25	1.20	1.18	1.10
\$600-\$899.....	28	28	92.9	96.4	1.34	1.23	1.24	1.19
\$900 or more.....	5	3	100.0	100.0	1.80	1.50	1.80	1.50
Not stated.....	4	1	100.0	100.0	0.80	0.80	0.80	0.80
Total.....	612*	594*						
Average.....			87.7	83.5	1.06	1.05	0.93	0.88

* The sex of 31 children was not stated.

To compare more accurately the consumption of milk as a beverage by boys and girls, the rates of consumption were calculated for equal numbers of boys and girls in each age group (table 30). These samples were built up by taking an equal number of boys and girls from each family, and thus the samples for each sex are identical as to racial origin, per capita income and family environment. All racial origin groups, except the Jewish, and all per capita income groups except the highest, afforded such samples. For boys and girls under 6 years of age, and from 13 to 16 years of age, differences in consumption were found, but the average consumption by all the boys was very close to that of all the girls. Among these children there were some who drank no milk, whereas figures for per capita consumption of milk given previously in the text of this section are amounts consumed only by those children who drank milk.

TABLE 30.—Daily Average Consumption of Milk as a Beverage by Equal Numbers of Boys and Girls in the Same Age Groups and in the Same Households, 1,082 Households, Vancouver, 1936.

Age	Number of boys	Number of girls	Daily average consumption of milk as a beverage by boys	Daily average consumption of milk as a beverage by girls
			pints	pints
Under 6.....	42	42	0.99	1.06
6-12.....	62	62	0.85	0.86
13-16.....	25	25	0.70	0.66
Total.....	129	129		
Average.....			0.87	0.88

Consumption of Milk at School.—Approximately 7 per cent of the children of school age drank milk at school. The average consumption by each child was approximately ten pints per month during full school months.

There does not appear to have been any relationship between the income of the parents and the percentage of children who drank milk at school. A greater percentage of the children of section C than of any other section of the city drank milk at school, but with the exception of section B, it was in section C that children drank the lowest average amount at home.

Consumption of Beverages Other than by Children.—Less than 8 per cent of the children under six years of age and 10.4 per cent of those aged 6 to 16 drank canned milk or beverages made with milk.

The households were divided into five groups according to the birthplace of the chief wage-earner of the household. Of children under six years of age, the largest percentage drinking canned milk or beverages made with milk, was in the Japanese birthplace group, but of the older children, a much larger percentage in the North American group than in the other groups drank those beverages (table 31).

Approximately 6 to 12 per cent of all children of each section of the city drank canned milk or beverages made with milk except in E, where no children drinking such beverages were recorded.

Larger percentages of the children of the low per capita income groups than of the higher groups drank cocoa and similar beverages made with water.

TABLE 31.—Percentage of all Children, of Children Under 6 Years of Age, and of Children 6-16 Years of Age Inclusive, Drinking Canned Milk or Beverages Made with Milk in each Birthplace Group, 1,082 Households, Vancouver, 1936.

Birthplace	Children under 6 years of age		Children 6-16 years of age inclusive		Total children	
	Number of children	Percentage drinking above beverages	Number of children	Percentage drinking above beverages	Number of children	Percentage drinking above beverages
		%		%		%
North America.....	111	9.0	276	18.8	287	16.0
British Isles.....	131	8.4	300	10.0	431	9.5
China.....	42	0.0	105	0.0	151 ¹	0.0
Japan.....	40	12.5	83	6.0	123	8.1
Others.....	56	5.4	99	3.0	155	3.9
Total.....	380		863		1,247 ¹	
Average.....		7.6		10.4		9.5

¹ Including 4 children whose ages were not stated.

The larger percentages in both age groups drinking cocoa or similar beverages made with water were found in the birthplace group consisting chiefly of European countries other than the British Isles (table 32).

TABLE 32.—Percentage of all Children, of Children Under 6 Years of Age, and of Children 6-16 Years of Age Inclusive, Drinking Cocoa or Similar Beverages Made with Water in each Birthplace Group, 1,082 Households, Vancouver, 1936.

Birthplace	Children under 6 years of age		Children 6-16 years of age inclusive		Total children	
	Number of children	Percentage drinking above beverages	Number of children	Percentage drinking above beverages	Number of children	Percentage drinking above beverages
		%		%		%
North America.....	111	5.4	276	7.2	387	6.7
British Isles.....	131	6.1	300	7.7	431	7.2
China.....	42	0.0	105	0.0	151 ¹	0.0
Japan.....	40	0.0	83	4.8	123	3.3
Others.....	56	14.3	99	8.1	155	10.3
Total.....	380		863		1,247 ¹	
Average.....		5.8		6.4		6.2

¹ Including 4 children whose ages were not stated.

A larger percentage of the children of section C than of any other section drank cocoa or similar beverages made with water.

Less than 3 per cent of the children six years of age drank tea or coffee or both, while 20.7 per cent of the older children did so. A smaller percentage of the children of the relief group than of other per capita income groups drank such beverages, but generally there was no apparent relation between the consumption of those beverages and per capita income.

Tea was taken by children in the Chinese and Japanese groups to a greater extent than in any other of the birthplace groups (table 33). The Japanese children, with one exception, did not drink coffee and the Chinese children drank only tea and fresh milk.

Of the children in section B, 25.8 per cent drank tea or coffee or both, while only 8.1 per cent drank such beverages in section D.

TABLE 33.—Percentage of all Children, of Children Under 6 Years of Age, and of Children 6-16 Years of Age Inclusive, Drinking Tea or Coffee or Both, in each Birthplace Group, 1,082 Households, Vancouver, 1936.

Birthplace	Children under 6 years of age		Children 6-16 years of age inclusive		Total children	
	Number of children	Percentage drinking above beverages	Number of children	Percentage drinking above beverages	Number of children	Percentage drinking above beverages
		%		%		%
North America.....	111	1.8	276	20.7	387	15.2
British Isles.....	131	2.3	300	17.0	431	12.5
China.....	42	4.8	105	35.2	151*	25.8
Japan.....	40	5.0	83	25.3	123	18.7
Others.....	56	0.0	99	13.1	155	8.4
Total.....	380		863		1,247*	
Average.....		2.4		20.7		15.1

* Including 4 children whose ages were not stated.

Consumption of Milk and Cream and Standing in School.—Some relationship appears to have existed between the monthly per capita expenditure for milk and cream and the progress of children in school. The percentage of children in grades below those normal for the age of the children decreased, and the percentage in grades above normal increased, as the per capita bill for milk and cream rose (table 34). The per capita milk and cream bill was, however, an indication of per capita income, and higher per capita income entailed other advantages as well as that of a greater consumption of milk and cream.

TABLE 34.—Percentage of Children in Grades Below Normal, Normal and Above Normal for Age, in Groups Classified According to Per Capita Bill for Milk and Cream, 1,082 Households, Vancouver, 1936.

Monthly per capita bill for milk and cream	Number of children of school age whose grade was stated	Percentage of children		
		Below normal	Normal	Above normal
		%	%	%
None.....	24	20.8	70.9	8.3
Less than \$0.50.....	75	12.0	76.0	12.0
\$0.50-\$0.99.....	254	10.2	84.3	5.5
\$1.00-\$1.49.....	264	11.0	75.0	14.0
\$1.50-\$1.99.....	113	12.4	74.3	13.3
\$2.00-\$2.49.....	49	4.1	77.5	18.4
\$2.50-\$2.99.....	16	0.0	81.3	18.7
\$3.00 and over.....	9	0.0	100.0	0.0
Not stated.....	8	37.5	62.5	0.0
Total.....	812			
Average.....		10.8	78.2	11.0

USE OF CREAM, EVAPORATED MILK, CONDENSED MILK AND BUTTERMILK

Cream.—Whipping cream was used by 15.8 per cent of the households. Its use increased greatly with an increase in per capita income (table 35). The per capita consumption increased from none in the households receiving relief, to 0.23 pint per month in the highest per capita income group. More households used whipping than table cream, but a larger quantity of the latter was used. Its use also increased with per capita income. Only 3.9 per cent of the

total households used cereal cream. The per capita consumption was 0.12 pint per month. Seventy-three per cent of the households, including all those receiving relief used no cream of any kind.

TABLE 35.—Percentage of Households Using*, and Per Capita Consumption of Whipping, Table and Cereal Cream, in each Per Capita Income Group, 1,082 Households, Vancouver, 1936.

Per capita income	Cream						No cream
	Whipping		Table		Cereal		
	Per-centage of house-holds	Monthly per capita con-sumption	Per-centage of house-holds	Monthly per capita con-sumption	Per-centage of house-holds	Monthly per capita con-sumption	
	%	pints	%	pints	%	pints	%
Relief.....	0.0	0.00	0.0	0.00	0.0	0.00	100.0
Less than \$300.....	6.1	0.04	6.1	0.06	1.7	0.05	86.7
\$300-\$599.....	19.3	0.08	12.4	0.14	5.0	0.20	68.1
\$600-\$899.....	25.8	0.16	21.1	0.27	5.2	0.17	56.7
\$900 or more.....	37.3	0.23	27.5	0.50	7.8	0.30	47.1
Not stated.....	0.0	0.00	0.0	0.00	100.0	0.44	0.0
Average.....	15.8	0.07	11.8	0.13	3.9	0.12	73.0

* 128 households using less than 1 pint per month not taken into consideration.

Whipping cream was used by approximately 20 per cent of the households having not more than one child, but by less than 5 per cent of the households having two or more children (table 36). The use of table cream was also much greater by households having few or no children. Cereal cream was used by few households, but there was a marked difference in consumption per capita between members of households having less than two children and those having more than two. As approximately 72 per cent of the households having three children and 95 per cent of those having four or more, had per capita incomes of less than \$300 per annum, income was probably the factor determining consumption of cream by those groups.

TABLE 36.—Percentage of Households Using, and Per Capita Consumption of Whipping, Table and Cereal Cream, in Groups Classified According to the Number of Children in the Household, 1,082 Households, Vancouver, 1936.

Number of children	Cream					
	Whipping		Table		Cereal	
	Percentage of households	Monthly per capita consumption	Percentage of households	Monthly per capita consumption	Percentage of households	Monthly per capita consumption
	%	pints	%	pints	%	pints
None.....	20.0	0.13	14.3	0.22	4.6	0.26
1.....	19.6	0.09	13.2	0.12	6.4	0.16
2.....	1.0	0.06	8.1	0.11	1.7	0.01
3.....	3.1	0.01	8.3	0.04	0.0	0.00
4 or more.....	4.1	0.01	4.1	0.01	1.4	0.01
Average.....	15.8	0.07	11.8	0.13	3.9	0.12

* 128 households using less than 1 pint per month not taken into consideration.

Whipping and table cream were used most by the executive—large business, and professional groups which had the largest incomes, and least by the salesman, unskilled and unemployed groups (figure 7, table 37).

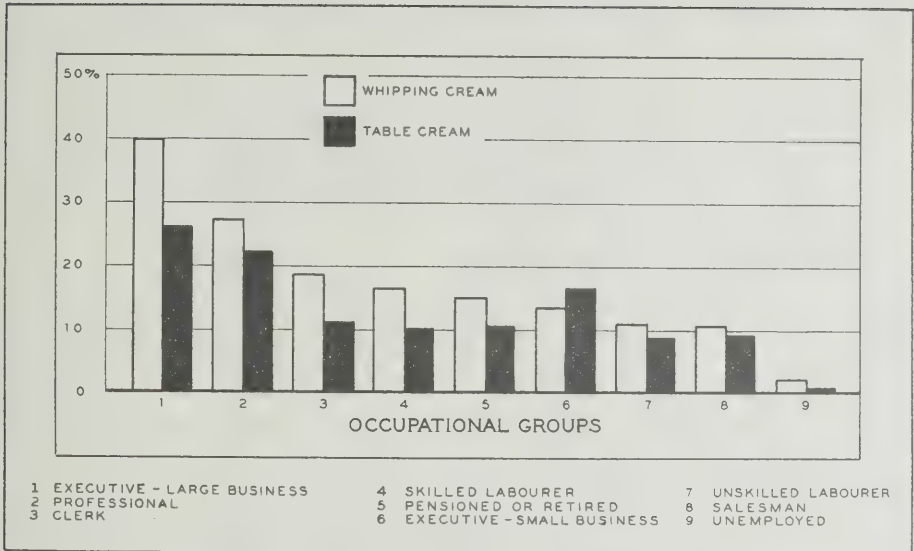


FIG. 7.—Percentage of the households in each occupational group which used whipping and table cream.

TABLE 37.—Percentage of Households Using¹, and Per Capita Consumption of Whipping, Table and Cereal Cream in each Occupational Group, 1,082 Households, Vancouver, 1936.

Occupation	Cream					
	Whipping		Table		Cereal	
	Percentage of households	Monthly per capita consumption	Percentage of households	Monthly per capita consumption	Percentage of households	Monthly per capita consumption
	%	pints	%	pints	%	pints
Professional.....	27.8	0.14	22.8	0.22	3.8	0.05
Executive—large business...	40.0	0.19	26.2	0.40	6.2	0.10
Executive—small business...	13.7	0.06	16.7	0.12	4.9	0.13
Salesman.....	10.6	0.03	9.1	0.15	4.5	0.09
Clerk.....	18.8	0.08	11.3	0.10	7.5	0.25
Skilled labourer.....	16.7	0.10	10.3	0.08	4.2	0.13
Unskilled labourer.....	10.8	0.04	8.9	0.07	3.0	0.14
Pensioned or retired.....	15.1	0.08	10.9	0.16	3.4	0.21
Unemployed.....	2.1	0.01	1.0	0.01	0.0	0.00
Others, or occupation not stated.....	11.1	0.03	22.2	0.10	0.0	0.00
Average.....	15.8	0.07	11.8	0.13	3.9	0.12

¹ 128 households using less than 1 pint per month not taken into consideration.

The racial origin groups having the highest rates of consumption of whipping cream were the Scotch, Irish, American—not otherwise stated, Canadian—not otherwise stated, and Italian (table 38). The Russian and Ukrainian, Chinese and Japanese groups used no whipping cream. The per capita consumption of table cream was highest in the European—not otherwise stated, group, which used little whipping cream. The British—not otherwise stated, Scotch and Jewish were next in rank in consumption of table cream, while the Chinese, Japanese, French and Russian and Ukrainian groups were lowest. The Russian and Ukrainian group had the highest per capita consumption of cereal cream, followed by the Teutonic group. The British—not otherwise stated, and French groups used no cereal cream.

TABLE 38.—Percentage of Households Using¹, and Per Capita Consumption of Whipping, Table and Cereal Cream in each Racial Origin Group, 1,082 Households, Vancouver, 1936.

Racial Origin	Cream					
	Whipping		Table		Cereal	
	Percentage of households	Monthly per capita consumption	Percentage of households	Monthly per capita consumption	Percentage of households	Monthly per capita consumption
	%	pints	%	pints	%	pints
English, Welsh, Manx.....	16.9	0.08	10.1	0.10	4.6	0.15
Scotch.....	18.0	0.11	16.7	0.23	2.3	0.10
Irish.....	24.5	0.11	10.4	0.10	2.8	0.05
British—not otherwise stated.....	13.0	0.05	21.7	0.26	0.0	0.00
French.....	7.7	0.02	15.4	0.04	0.0	0.00
Canadian—not otherwise stated.....	17.2	0.10	11.5	0.11	4.6	0.14
American—not otherwise stated.....	23.5	0.11	29.4	0.14	5.9	0.14
Teutonic: of countries of Northwestern Europe....	15.1	0.04	5.7	0.17	1.9	0.27
Russian and Ukrainian....	0.0	0.00	30.0	0.08	20.0	0.40
Italian.....	10.0	0.10	0.0	0.00	10.0	0.15
Other European.....	9.5	0.04	23.8	0.44	4.8	0.19
Jewish.....	9.1	0.02	27.3	0.22	9.1	0.17
Chinese.....	0.0	0.00	2.2	0.00	4.4	0.11
Japanese.....	0.0	0.00	2.2	0.01	2.2	0.01
Others, or racial origin not stated.....	0.0	0.00	0.0	0.00	25.0	0.60
Average.....	15.8	0.07	11.8	0.13	3.9	0.12

¹ 128 households using less than 1 pint per month not taken into consideration.

Sections D, E, and A of the City which had households of relatively high incomes, had the largest percentages of households using whipping cream (table 39). Table cream was used most extensively and the rates of consumption were highest in section A and D.

TABLE 39.—Percentage of Households Using¹, and Monthly Per Capita Consumption of Whipping, Table and Cereal Cream in each Section of the City, 1,082 Households, Vancouver, 1936.

Section	Cream						No cream
	Whipping		Table		Cereal		
	Percentage of households	Monthly per capita consumption	Percentage of households	Monthly per capita consumption	Percentage of households	Monthly per capita consumption	Percentage of households
	%	pints	%	pints	%	pints	%
A.....	16.1	0.11	22.6	0.38	1.6	0.01	64.5
B.....	5.2	0.06	7.2	0.05	5.2	0.18	85.0
C.....	13.1	0.05	8.4	0.07	2.8	0.10	78.2
D.....	26.5	0.13	19.2	0.22	6.9	0.19	56.9
E.....	18.8	0.08	11.2	0.17	0.0	0.00	75.0
Average...	15.8	0.07	11.8	0.13	3.9	0.12	73.0

¹ 128 households using less than 1 pint per month not taken into consideration.

Evaporated Milk.—Evaporated milk was used by 47 per cent of the households and the per capita consumption was one pound per month. In the highest per capita income group only 27.5 per cent of the households used evaporated milk, while in the other groups, 45.5 to 53.6 per cent used it (table 40). The

highest amount per capita was used by those receiving relief, but the per capita consumption by other households having per capita incomes of less than \$300 was low.

TABLE 40.—Percentage of Households Using*, and Per Capita Consumption of Evaporated Milk and Buttermilk in each Per Capita Group, 1,082 Households, Vancouver, 1936.

Per capita income	Evaporated milk		Buttermilk	
	Percentage of households	Monthly per capita consumption	Percentage of households	Monthly per capita consumption
	%	pounds	%	pints
Relief.....	49.3	1.32	2.9	0.05
Less than \$300.....	47.8	0.89	5.2	0.09
\$300-\$599.....	45.5	1.07	7.9	0.19
\$600-\$899.....	53.6	1.11	9.8	0.32
\$900 or more.....	27.5	0.56	15.7	0.52
Average.....	47.0	1.00	7.4	0.17

* Households using less than 1 unit per month not taken into consideration.

The percentage of households using evaporated milk decreased from 49.2 per cent of the households having no children to 40.5 per cent of the households having four or more children, and per capita consumption of evaporated milk decreased from 1.26 pounds where there were no children to 0.75 pound per month as the number of children increased to four or more.

For the different occupational groups, the number of households using evaporated milk varied from 37 per cent and 38 per cent of the large business executive and professional groups respectively, to 55.7 per cent of the unskilled group.

Among racial origin groups, the highest per capita consumption of evaporated milk, more than two pounds per month, was found in the American—not otherwise stated, group. The per capita consumption in the French and Russian groups was also high, but the numbers of persons in those groups were few. The British—not otherwise stated, group, which had the highest per capita consumption of fresh milk, had much the lowest per capita consumption of evaporated milk, excepting that of the Chinese, which was less than half a pound per month.

Evaporated milk was used most in sections C and B where incomes were relatively low.

Condensed Milk.—Condensed milk was used by only a little more than 1 per cent of all the households.

Buttermilk.—Buttermilk was used in 7.4 per cent of the households. Although it was not expensive, it was used more extensively as per capita income increased. Possibly because of its marked flavour it was used more extensively by households consisting of adults only. Consumption was highest in the clerical group and lowest in the unemployed group.

Approximately 23 per cent of the households of the French racial origin group used buttermilk, but the per capita consumption of that group was lower than that of the Irish who used almost half a pint per month per person. The Chinese and Japanese used none. It was most popular in section E and least in sections D and B of the city.

CHARACTERISTICS OF SECTIONS OF CITY

Of the five areas of the city designated A, B, C, D, E, in fig. 1, section C contained approximately half of the total households and D almost one-quarter of them (table 41). The percentage of the total number of children was much greater than the percentage of total households in section B, but considerably smaller in sections D, A, and E, and the average number of children per household was therefore much larger in section B than in D, A and E.

TABLE 41.—Percentage of Households, Adults and Children, and Average Number in each Section of the City, 1,082 Households, Vancouver, 1936.

Section	Households		Adults		Children		Average Number in the household		
	Num-ber	Per-centage	Num-ber	Per-centage	Num-ber	Per-centage	Persons	Adults	Children
		%		%		%			
A.....	62	5.7	187	6.2	41	3.3	3.7	3.0	0.7
B.....	153	14.2	425	14.2	302	24.2	4.8	2.8	2.0
C.....	527	48.7	1,422	47.4	608	48.7	3.9	2.7	1.2
D.....	260	24.0	728	24.2	234	18.8	3.7	2.8	0.9
E.....	80	7.4	241	8.0	62	5.0	3.8	3.0	0.8
Total.....	1,082	100.0	3,003	100.0	1,247	100.0	3.9	2.8	1.1
Average.....									

In section A, 64.5 per cent of the households had no children, while in section B only 30.1 per cent had no children (table 42). In section A, only 17.7 per cent of the households had more than one child but in section B, 49.6 per cent and in section C, 32.5 per cent had more than one.

TABLE 42.—Comparison of the Percentages of the Households of each Section of the City Having Different Numbers of Children in the Household, 1,082 Households, Vancouver, 1936.

Number of children in the households	Section					Average
	A	B	C	D	E	
	%	%	%	%	%	%
None.....	64.5	30.1	45.5	50.8	57.5	46.6
1.....	17.8	20.3	22.0	24.2	17.5	21.7
2.....	11.3	17.6	16.1	15.8	16.2	16.0
3.....	4.8	13.1	10.3	5.0	7.5	8.9
4 or more.....	1.6	18.9	6.1	4.2	1.3	6.8
Total.....	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 43.—Comparison of the Percentages of the Total Number of Households of each Section of the City in each Per Capita Income Group, 1,082 Households, Vancouver, 1936.

Per capita income	Section					Average
	A	B	C	D	E	
	%	%	%	%	%	%
Relief.....	0.0	9.2	7.6	5.8	0.0	6.4
Less than \$300.....	32.2	49.0	38.5	18.5	1.2	32.1
\$300-\$599.....	32.3	29.4	41.9	42.3	30.0	38.8
\$600-\$899.....	32.3	10.4	10.3	26.1	45.0	17.9
\$900 or more.....	3.2	1.3	1.7	7.3	23.8	4.7
Not stated.....	0.0	0.7	0.0	0.0	0.0	0.1
Total.....	100.0	100.0	100.0	100.0	100.0	100.0

The following percentages of the total number of persons of the various sections had per capita incomes of \$600 or more: E, 64.0 per cent; D, 25.9 per cent; A, 25.4 per cent, C, 7.7 per cent; B, 6.9 per cent (table 44). The percentages of the total number of persons having per capita incomes of \$300 or less in each section were: E, 2.3 per cent, D, 27.9 per cent; A, 40.8 per cent; C, 55.6 per cent; B, 70.0 per cent.

TABLE 44.—Comparison of the Percentages of the Total Number of Persons of each Section of the City in each Per Capita Income Group, 1,082 Households, Vancouver, 1936.

Per capita income	Section					Average
	A	B	C	D	E	
	%	%	%	%	%	%
Relief.....	0.0	10.0	7.9	6.4	0.0	7.0
Less than \$300.....	40.8	60.0	47.7	21.5	2.3	40.3
\$300—\$599.....	33.8	21.9	36.7	46.2	33.7	35.9
\$600—\$899.....	23.7	6.6	7.0	21.1	42.9	13.5
\$900 or more.....	1.7	0.3	0.7	4.9	21.1	3.1
Not stated.....	0.0	1.2	0.0	0.0	0.0	0.2
Total.....	100.0	100.0	100.0	100.0	100.0	100.0

The different occupational groups were found in largest percentages in the following sections: professional, E, A, and D; executive of large business, E; executive of small business, B and D; salesman, E; clerk, D and E; skilled labourer, C, B and A; unskilled labourer, B and C; pensioned or retired, C, A, E and D; unemployed, B and C (table 45).

TABLE 45.—Comparison of the Percentages of the Households of each Section of the City, in each Occupational Group, 1,082 Households, Vancouver, 1936.

Occupation	Section					Average
	A	B	C	D	E	
	%	%	%	%	%	%
Professional.....	14.5	5.2	2.9	13.5	15.0	7.3
Executive—large business.....	9.7	3.9	1.1	9.6	27.5	6.0
Executive—small business.....	9.7	14.4	6.3	13.1	8.7	9.4
Salesman.....	4.8	3.3	3.8	8.8	18.8	6.1
Clerk.....	9.7	4.6	5.9	10.8	10.0	7.4
Skilled labourer.....	22.6	23.5	31.3	16.1	7.5	24.3
Unskilled labourer.....	16.1	29.4	23.9	8.5	0.0	18.8
Pensioned or retired.....	12.9	3.3	13.3	10.4	11.2	11.0
Unemployed.....	0.0	11.1	10.4	8.8	1.3	8.9
Others, or occupation not stated.....	0.0	1.3	1.1	0.4	0.0	0.8
Total.....	100.0	100.0	100.0	100.0	100.0	100.0

Percentages of the various racial origins were highest in the following sections; British, D, E and C; Canadian—not otherwise stated, A and E; American—not otherwise stated, A and E; European, B and C; Jewish, D; Chinese and Japanese, B (table 46).

TABLE 46.—Comparison of the Percentages of the Households of each Section of the City in each Racial Origin Group, 1,082 Households, Vancouver, 1936.

Racial origin	Section					Average
	A	B	C	D	E	
	%	%	%	%	%	%
English, Welsh, Manx.....	37.1	19.0	42.0	40.8	38.8	38.4
Scotch.....	16.1	14.4	23.0	20.0	21.2	20.5
Irish.....	6.5	5.2	9.9	11.9	13.8	9.8
British—not otherwise stated.....	1.6	1.3	0.6	5.4	3.8	2.1
French.....	0.0	1.3	1.7	0.4	1.2	1.2
Canadian—not otherwise stated.....	24.2	3.9	6.8	7.7	12.5	8.0
American—not otherwise stated.....	4.8	1.3	1.1	1.1	3.8	1.6
Teutonic: of countries of Northwestern Europe.....	0.0	5.9	5.7	4.2	3.7	4.9
Russian and Ukrainian.....	0.0	0.7	1.7	0.0	0.0	0.9
Italian.....	0.0	2.0	1.1	0.4	0.0	0.9
Other European.....	1.6	3.3	1.9	1.5	1.2	1.9
Jewish.....	0.0	0.6	0.7	2.3	0.0	1.0
Chinese.....	1.6	26.1	0.4	0.8	0.0	4.2
Japanese.....	6.5	14.4	2.3	2.7	0.0	4.2
Others, or racial origin not stated.....	0.0	0.6	0.2	0.8	0.0	0.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

SUMMARY

The daily per capita consumption of milk was found to be 1.65 pint in the 1,082 households visited. The range in per capita consumption was approximately 0.20 pint between the lowest and highest per capita income groups.

The number of children in the household appeared to influence per capita consumption even in the same per capita income group. Households containing two children had the largest per capita consumption in all per capita income groups, while households containing four or more children used less per capita than households having only adults in the large group where the per capita income was less than \$300.

Differences in consumption by occupational groups were largely due to differences in income, although the professional group used relatively high amounts per person in all per capita income groups.

Per capita consumption of milk was greater in the British, Canadian—not otherwise stated, Teutonic and European—not otherwise stated, racial origin groups than in the other European, Jewish and Oriental groups. This was true in nearly all per capita income groups.

The various sections of the City arranged in order of per capita consumption of milk were E, D, A, C, B.

Approximately 38 per cent of the households interviewed used two pints of milk per day and no milk was used by 6.6 per cent of the households. For 35 per cent of the households, the per capita monthly bill for milk and cream was \$1 to \$1.49.

The per capita bill for food was \$8.90 per month, and on the average 13.5 per cent of that sum was paid for milk and cream.

Pasteurized milk was used by three-quarters of the households. That containing over 5 per cent butterfat was used by 18.4 per cent, the medium grade by 10.0 per cent and the low grade by 47.0 per cent. Raw milk was used by 20.2 per cent of the households.

In more than 62 per cent of the 1,004 households questioned as to the reasons for not buying more milk, the housewives stated that they considered a sufficient quantity was purchased. Inability to pay for more was given as a reason by 24.5 per cent.

There was little variation in amounts of milk bought at different seasons.

All the milk used by 89 per cent of the households was delivered by the dairies to the door, and 93 per cent of the householders bought their milk from one dairy only.

Approximately 54 per cent of the total milk consumed was used as a beverage.

Less than 14.0 per cent of the adults drank milk as a beverage, but the percentage ranged from 10.5 per cent for the households on relief, and 7.4 per cent for those households with a per capita income of less than \$300, to 22.6 per cent for the highest per capita income group. The average daily consumption by those drinking milk was 0.92 pint, that of women drinking milk being 0.86 pint, and of men, 0.99 pint. The per capita consumption for all adults, including those who drank no milk, was only 0.13 pint.

Approximately 86 per cent of the children drank milk. The daily average consumption by those who drank it was 1.04 pints, or averaged over all children, 0.90 pint. Of the children under 6 years of age, 95.5 per cent drank milk, and their average consumption was 1.16 pints per day, giving an average consumption of 1.11 pints for all children of that age. The percentage of children 6 to 12 years of age drinking milk was 85.7. Their average consumption was 0.98 pint and the consumption averaged over all children of that age, 0.84 pint. Corresponding figures for children aged 13 to 16 years were 74.7 per cent, one pint and 0.74 pint. The range between the average daily consumption by the children drinking milk in the relief group and those in the highest per capita income group was 0.77 pint.

As the number of children in the household increased above two in the same per capita income group, the amount of milk drunk per child decreased. Consumption of milk by children was affected by occupation and racial origin of the head of the household in much the same way as was per capita consumption. There was little difference in the use of milk by boys and girls. Only 7.2 per cent of the children of school age drank milk at school.

Canned milk and beverages made with milk were drunk by 9.5 per cent of the children, cocoa and similar beverages made with water by 6.2 per cent, and tea, coffee or both, by 15.1 per cent. The standing of children in school appeared to be related to some extent to the amount of milk and cream used, which was closely related to income.

Whipping, table, and cereal cream were used by 15.8 per cent, 11.8 per cent and 3.9 per cent, respectively, of the households. The average consumption of each was very small. The use of whipping and table cream varied closely with income.

Evaporated milk was used by 47.0 per cent of the households, and the per capita consumption was one pound per month. Condensed milk was used by only 1.2 per cent of the households, and buttermilk by 7.4 per cent of the households. Buttermilk was used more by persons having higher incomes.

Income was the factor most definitely determining consumption of milk. In the 38 per cent of the households with annual per capita incomes of less than \$300, the milk consumption was approximately at the standard of those receiving relief. The cost of milk was given as a reason for not buying more by approximately 43 per cent of the lowest per capita groups, not including the relief group. The effect of low incomes upon the amount of milk drunk by children was most striking. The average consumption of milk by those in relief households was 0.76 pint. Of the 1,247 children, two-thirds were in households having per capita incomes of less than \$300, and the average consumption by those children was 0.78 pint. In the next higher per capita income group it was 1.13 pints and it rose to 1.69 pints per child in the highest income group.

For relief households to maintain even their low rate of consumption of milk it was necessary to spend 18.0 per cent of their food expenditure for milk

Not only insufficiency of income, but also lack of knowledge of the value of milk was evident. Even in the highest per capita income group, per capita consumption was only 0.79 pint, and that by children, 1.69 pints. In the 62 per cent of the households in which it was considered that enough milk was used, the per capita consumption was only 0.73 pint per day. The Japanese, Chinese and some European groups used little milk, even when their incomes were relatively large. Approximately 26 per cent of the Chinese children, 19 per cent of the Japanese children and 15 per cent of the children of the North American birthplace group drank tea, coffee, or both.

APPENDIX I

Questionnaire Used in Survey

1. Record No..... Date..... Enumerator.....
2. City..... Street.....
3. Number of adults (over 16 years of age) in family.....
4. Number of children..... Domestic Servants.....
Boarders..... Total Household.....
5. (a) Birthplace of Head of Family.....
(b) Racial origin of Head of Family.....
(c) Occupation of Head of Family.....
(d) Occupation of Other Members of Family.....

- | 6. Annual Incomes: | Actual Family Income: |
|----------------------------|-----------------------|
| (a) Relief | |
| (b) Less than \$1,000..... | |
| (c) \$1,000—\$1,999 | |
| (d) \$2,000—\$2,999 | |
| (e) \$3,000—\$3,999 | |
| (f) \$4,000—\$4,999 | |
| (g) More than \$5,000..... | |

- | 7. Give age of children and grades in school:
Age of Child: | Grade in School: |
|--|------------------|
| | |
| | |
| | |

Consumption of Milk

8. How much milk is used daily in the homepints.
9. How much is used as a beverage.....pints. In cooking, cereals, etc.....
pints.
10. How much do the adults drink:
Women—Number drinking milk (). Total pints.....
Men—Number drinking milk (). Total pints.....
11. How much do the children drink:
Boys: under 6 (), total pints.....; 6-12 (), total pints.....; 13-16
 (), total pints.....
Girls: under 6 (), total pints.....; 6-12 (), total pints.....;
 13-16 (), total pints.....
12. Do any of the children not drink milk. Yes..... No..... If there are, state
number of children.....
Boys—under 6 years..... 6-12 years..... 13-16 years.....
Girls—under 6 years..... 6-12 years..... 13-16 years.....
13. Proportion of milk purchased at the door—100 per cent.....or.....per
cent.
Is all the milk purchased from the same dairy—Yes..... No.....
14. Why do you not buy more milk.....
15. Do children drink extra milk at school—Yes..... No.....
If they do, give approximate quantities:
Boys—under 6 (), total pints.....; 6-12 (), total pints.....;
 13-16 (), total pints.....
Girls—under 6 (), total pints.....; 6-12 (), total pints.....;
 13-16 (), total pints.....
16. Do the children drink other beverages (including canned milk). Yes.....
No..... If they do, name the beverage.
Boys—under 6 ()..... 6-12 ()..... 13-16 ().....
Girls—under 6 ()..... 6-12 ()..... 13-16 ().....
17. Does the amount of milk used vary according to season? Yes..... No.....
If so, why?

18. Kind of milk purchased:
- Pasteurized Low fat (3·25% to 3·4%).....
 - Pasteurized Med. fat (4% to 4·15%).....
 - Pasteurized High fat (5% to 5·15%).....
 - Raw Baby special (certified).....
 - Raw Low fat (3·25% to 3·4%).....
 - Raw Med. fat (4% to 4·15%).....
 - Raw High fat (5% to 5·15%).....
19. How much is used per month of evaporated milkpounds. Condensed milkpounds. Milk powderpounds. Buttermilkquarts.
20. How much cream is used per month. Whipping cream..... Table cream Cereal cream.....
21. Total monthly bill for fresh milk and cream.....

APPENDIX II

Classification of Workers According to Occupation

1. Professional:

Architect Artist Auditor Barrister Chartered accountant Clergyman Dentist Dietician Editor Engineer—chemical, civil, electrical	Journalist Lecturer Musician Nurse Officer of ship Optometrist Pharmacist Physician Teacher
--	---
2. Business Executive:

Broker Contractor Exporter Hotel keeper Manager—bank cannery factory garage office railway department shipping business store Manufacturer Merchant Nurseryman	
--	--
3. Salesman:

Bond salesman Commercial traveller Clerk in store Insurance agent	
--	--
4. Clerk:

Accountant Bank teller Book-keeper Customs officer	Office worker Postman Stenographer
---	--
5. Skilled Labourer:

Automobile body builder Baker Barber Brush maker Candy maker Carpenter Cook Dressmaker	Painter Plasterer Plumber Policeman—railway provincial Prospector Radio serviceman Roofer
---	--

Electrician
 Engineer—locomotive
 stationary
 marine
 steam shovel

Fireman
 Foreman—street labourer
 Gas service man
 Gas fitter
 Grain elevator worker
 Hand tooler (furniture)
 Landscape gardener
 Load dispatcher (railway)
 Lumber grader
 Mechanic
 Millwright
 Moulder

6. Unskilled Labourer:

Caretaker
 Chauffeur
 Elevator operator
 Factory worker
 Fisherman
 Gas works employee
 Gardener's helper
 Hospital orderly
 Incinerator worker
 Janitor
 Labourer
 Laundress

7. Pensioned or Retired:

8. Unemployed

Sheet metal worker
 Shipper
 Signwriter
 Stonecutter
 Street car conductor
 Switch foreman
 Tailor
 Telegraph operator
 Telephone lineman
 " operator
 Typewriter mechanic
 Upholsterer
 Varnish maker
 Violin maker
 Welder
 Woodworker

Longshoreman
 Lumberman
 Milkman
 Miner
 Packer
 Section hand
 Restaurant worker
 Rooming-housekeeper
 Trackman (electric railway)
 Truckdriver
 Waiter

APPENDIX III

Classification of Racial Origins

1. English, Welsh, Manx
2. Scotch
3. Irish
4. British—not otherwise stated
5. French
6. Canadian—not otherwise stated
7. American—not otherwise stated
8. Teutonic: of the countries of Northwestern Europe
9. Russian and Ukrainian
10. Italian
11. Other European
12. Jewish
13. Chinese
14. Japanese

